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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,052	04/02/2007	Malcolm Lambert	DP-310801	9228
22851 7590 01/20/2010 DELPHI TECHNOLOGIES, INC LEGAL STAFF - M/C 483-400-402 5725 DELPHI DRIVE PO BOX 5052 TROY, MI 48007				
EXAMINER				
JONATIS, JUSTIN M				
ART UNIT		PAPER NUMBER		
3752				
MAIL DATE		DELIVERY MODE		
01/20/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/575,052

**Applicant(s)**

LAMBERT ET AL.

**Examiner**

JUSTIN JONAITIS

**Art Unit**

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Drawings***

1. The drawings were received on 11/10/2009. These drawings are acceptable.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

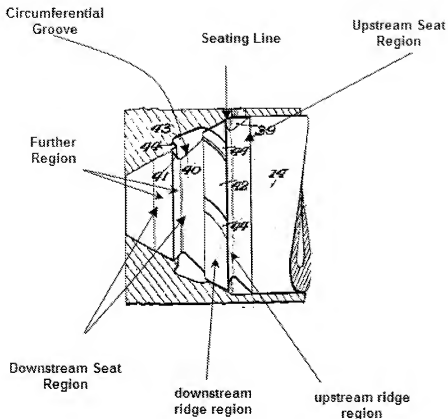
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent #1,952,816 to Mock.

The figure below is reproduced from the Mock Figure 3 reference in order to show examiner's interpretation.



U.S. Patent #1,952,816 to Mock: Figure 3

Mock discloses an injection nozzle for an internal combustion engine which is a valve covering orifice type injector, the injection nozzle comprising: a nozzle body (casing member (6)) provided with a bore (bore (10)) defining a valve seating surface (conical valve seat (11)), a valve member (valve (14)) which is moveable within the bore, wherein the valve member includes an upstream seat region (See Figure above) defining an upstream cone angle, where the upstream cone angle and the seat cone angle define an upstream differential angle, and a downstream seat region (See Figure above) defining a downstream cone angle, the downstream cone angle and the seat cone angle together defining a downstream differential angle, the valve member further comprising an annular ridge (See Figure above, downstream ridge region and upstream ridge region) protruding from the upstream and downstream seat

region being disposed immediately downstream of the upstream seat region, wherein the protruding annular ridge defines a seating line (See Figure above) having a seat diameter, the seating line and being engageable with the valve seating surface to control fuel injection from the nozzle body. The protruding annular ridge includes an upstream and downstream ridge region (See Figure above) where the seating line is defined at an intersection between the upstream and downstream ridge regions.

The valve member disclosed by mock further includes a circumferential groove (See Figure above) arranged downstream of the downstream ridge region and immediately upstream of the further region (the end portion of the downstream seat region), wherein a lower edge of the circumferential groove and the further region define an intersection which defines, together with the seating surface a radial clearance that is sufficiently small so that a lower portion of the downstream ridge region defines a load bearing surface for the valve member.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent #1,952,816 to Mock.

Mock discloses the invention as described above including the region adjacent to the protruding ridge on the downstream side of the seating line is a valve tip region, and the valve tip region including a chamfered tip (tip portion of valve is slanted). Mock however fails to disclose the specific dimensioning of components (the radial clearance of the valve and the upstream differential angle vs. downstream differential angle) necessary to provide the various desired seating of the valve with the seating surface.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the appropriate dimensions of components in order to produce the desired seating arrangement of the valve needle in the valve seat, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

#### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN JONAITIS whose telephone number is (571)270-5150. The examiner can normally be reached on Monday - Thurs 6:30am - 5:00 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571)272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUSTIN JONAITIS/  
Examiner, Art Unit 3752

/Dinh Q Nguyen/  
Primary Examiner, Art Unit 3752